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| | CLO-8 Able to explain and implement methods to resolve differential equations. | PLO-3 PLO-5 PLO-6 |
| Content | In this course, students will learn how to solve mathematical problems using numerical algorithm approaches. Topics include errors, number representation, Taylor's theorem, nonlinear equations, linear equations, interpolation, regression, numerical integration, numeric derivatives and differential equations. | |
| Study and examination requirements and forms of examination | <ul style="list-style-type: none"> • In-class exercises • Quiz 1 and 2 • Assignment 1, 2, 3 • Mid-term examination • Final examination | |
| Media employed | LCD, whiteboard, websites (myITS Classroom). | |
| Assessments and Evaluation | CO-1: Question no 1 in midterm exam (10%) CO-2: Question no 2 in midterm exam (10%) CO-3: Question no 3 in midterm exam (10%) CO-4: Assignment 1 (5%), question no 4 in midterm exam (10%), Quiz 2 (5%) CO-5: Question no 1 in final exam (10%), question no 2 in final exam (10%) CO-6: Assignment 2 (5%), question no 3 in final exam (10%) CO-7: Assignment 3 (5%), question no 4 in final exam (5%) CO-8: Question no 4 in midterm exam (5%) | |
| Reading List | <ol style="list-style-type: none"> 1. Greenbaum and T. P. Chartier. Numerical Methods: Design, Analysis and Computer Implementation of Algorithms. Princeton University Press, 2012. 2. W. H. Press, S. A. Teukolsky, W. T. Vetterling, B. P. Flannery. Numerical Recipes: The Art of Scientific Computing. Cambridge University Press, 2007. 3. L. R. Scott. Numerical Analysis. Princeton University Press, 2011. 4. E. Suli, D. F. Mayers. An Introduction to Numerical Analysis. Cambridge University Press, 2003. | |